Basis of Reporting GHG Emissions

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1. Introduction

Cabot reports Scope 1 and 2 greenhouse gas (GHG) emissions, biogenic emissions, and GHG intensity for all sites under operational control, as defined in our organizational boundary approach. Reporting is conducted in accordance with The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition) and follows guidance from the IPCC Guidelines for National Greenhouse Gas Inventories (2006) and The Climate Registry General Reporting Protocol (Version 3.0).

Scope 1 includes direct GHG emissions from our production processes, while Scope 2 covers indirect GHG emissions associated with the import of energy. Emissions are calculated using the IPCC's Sixth Assessment Report 100-year global warming potentials. This approach ensures that inventory data is accurate, complete, consistent, and transparent, with supporting documentation that is readily verifiable.

Our reporting period aligns with the calendar year, from January 1 to December 31. Historical data, including the baseline, is restated when material changes occur (defined as >1% of total reported environmental metric) due to data improvements (e.g., refined estimation or calculation methodologies). The baseline year for Cabot's GHG emissions target is 2022.

In addition to data improvements, Cabot will restate the baseline year or subsequent years' emissions data in the event of a material structural change, such as a significant merger, acquisition or divestiture. Cabot will not restate the baseline or subsequent years for smaller changes, such as the closure or acquisition of a manufacturing site, unless the impact is considered material. However, commentary may be provided in the narrative to address such changes.

Cabot treats acquired and divested sites in accordance with The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition). Acquired facilities that were operational in the base year will have their emissions and production counted for both the base and current years. Emissions and production from divested facilities will be removed from both the base and current years. Cabot aims to fully integrate acquired entities through data collection, consolidation and reporting within one year following the close date of the acquisition or merger.

2. Scope of Reporting

2.1. Scope 1 and 2 Inventory Boundaries

Cabot's Scope 1 and 2 inventories reflect significant direct and indirect GHG emissions at Cabot owned or leased premises. GHG accounting is based on the operational control approach at facilities where Cabot has a controlling share greater than 50% and where five or more people are employed by Cabot during the reporting year. The GHG emissions within Cabot's Scope 1 and 2 reporting boundaries are listed in table 2.1.a.

Table 2.1.a GHGs in Scope 1 and 2 Reporting Boundaries

CO_2	CH_4	N_2O

In addition to the GHGs listed in table 2.1.a, Cabot recognizes that minor emissions of other major GHGs (e.g., HFCs, PFCs, SF_6 and NF_3) occur within the operational boundary. However, these emissions are considered insignificant and, therefore, not quantified.

Scope 1 GHG emission categories at Cabot's facilities include production processes, stationary combustion, mobile combustion, nitrogen oxides (NO_X) control, and sulfur dioxide (SO_2) control. Emissions from these sources are tracked based on their relevance to each business unit's operations. Refrigerant losses are excluded as a source of Scope 1 GHG emissions due to immateriality of these sources.

Scope 2 GHG emission categories at Cabot's facilities include imported steam and electricity. Emissions from these sources are tracked based on their relevance to each business unit's operations. Cabot does not import hot water at any of its facilities.

2.2. Use of Energy Attribute Certificates and Offsets

Cabot utilizes Energy Attribute Certificates (EACs), either unbundled or bundled with electricity supply, to claim renewable energy use at facilities and associated market-based Scope 2 GHG reductions. Preference is given to EACs from solar, wind, hydropower, and other non-combustion generation sources over biomass to secure a "carbon free" claim. Cabot aims to use Renewable Energy Certificates (REC) generated within 18 months of the electricity being consumed. Currently, Cabot does not employ an "age of facility" criterion for REC purchasing.

3. Basis for Reporting Scope 1 GHG Emissions

Cabot's GHG calculations are completed in accordance with The Greenhouse Gas Protocol: Corporate Accounting and Reporting Standard (Revised Edition) and follow guidance from the IPCC Guidelines for National Greenhouse Gas Inventories (2006) and The Climate Registry: General Reporting Protocol (Version 3.0). Emissions are calculated using the operational control approach, applying the IPCC's Sixth Assessment Report 100-year global warming potentials, and included emissions of CO_2, CH_4 and N_2O.

Cabot maintains databases that track monthly usage volumes of feedstock materials and fossil fuels, as well as production volumes. Primary data is obtained from energy utility invoices, fuel receipts and process meter measurements. Scope 1 CO_2 emissions from the manufacturing process are predominantly calculated using Cabot's own data, based on carbon mass balance calculations, Cabot-derived emission factors, and publicly available emission factors from IPCC's Guidelines for National Greenhouse Gas Inventories (2006).

Scope 1 CH_4 carbon black manufacturing process emissions are calculated using an emission factor published in IPCC's Guidelines for National Greenhouse Gas Inventories (2006) for the carbon black process. Scope 1 GHG emissions from stationary combustion are, in most cases, calculated using emission factors published in IPCC's Guidelines for National Greenhouse Gas Inventories (2006). The exception is combustion of butadiene, for which emissions are calculated using Cabot-derived emission factors based on a carbon mass balance.

Scope 1 absolute GHG emissions undergo a limited assurance in accordance with the International Standard for Assurance Engagements (ISAE) 3000 (Revised).

4. Basis for Reporting Scope 2 GHG Emissions

Scope 2 GHG emissions from purchased electricity are calculated in accordance with The Greenhouse Gas Protocol: Corporate Accounting and Reporting Standard (Revised Edition). Cabot obtains primary data for electricity and steam from invoices or process meter measurements.

The calculation uses the latest available emission factors from the United States Environmental Protection Agency's eGRID, the latest National Inventory Report of GHG Sources and Sinks in Canada, and the most recent International Energy Agency's (IEA) country-specific emission factors. For location-based emissions, these emission factors are multiplied by the amount of electricity purchased.

For market-based emission factors, adjustments are made for the purchase of any RECs or based on contract values. Residual mix emission factors are used, sourced from the Green-e Energy residual mix rates for the U.S., and the Association of Issuing Bodies (AIB) Residual Mix Report for Europe. In cases where a market-based value is unavailable, Cabot uses the location-based emission factor as a proxy. These emission factors are multiplied by the amount of electricity purchased to calculated market-based emissions.

5. Basis for Reporting Biogenic Emissions

Biogenic emissions are calculated and reported in accordance with The Greenhouse Gas Protocol: Corporate Accounting and Reporting Standard (Revised Edition). Biogenic carbon refers to carbon sequestered from the atmosphere during plant or biomass growth. This biomass material can be processed to produce sustainable feedstocks for the carbon black production process. When combusted, biogenic feedstock can create both biogenic and fossil-based emissions, depending on the biogenic carbon content.

In addition, biomass can be processed into biogenic fuels, which can be combusted to produce heat and other forms of energy. The sources of biogenic carbon that contribute to biogenic emissions are listed in table 5.a.

Table 5.a: Biogenic emissions categories, sources, and relevant GHGs.

Emissions Category	Emissions Source	Relevant GHGs	Explanation
Production processes	Biogenic carbon feedstock reactions and subsequent tail gas combustion at boiler plants and flares.	Biogenic CO_2	Feedstock containing biogenic carbon is either blended with feedstock without biogenic carbon content or used unblended. Cabot's chemical processes react these feedstocks (e.g., tire pyrolysis oil) to create a product containing biogenic carbon. Any biogenic carbon that is not retained

Emissions Category	Emissions Source	Relevant GHGs	Explanation
			in the product is emitted post combustion as biogenic CO_2. Direct CO_2 emissions from biologically sequestered carbon are reported separately from Scope 1 emissions.
Stationary Combustion	Hydrocarbon burners.	Biogenic CO_2	Fuel containing biogenic carbon is either blended with fuels without biogenic carbon content or used unblended to produce heat for plant processes. The carbon associated with the combustion of biogenic fuels is emitted as biogenic CO_2. Direct CO_2 emissions from biologically sequestered carbon are reported separately from Scope 1 emissions.

Cabot maintains databases that track monthly usage volumes of biogenic feedstock materials and fuels, as well as production volumes. Additionally, Cabot tracks the biogenic carbon content of any purchased materials, as measured through laboratory analysis. Biogenic CO_2 emissions from the manufacturing process are predominantly calculated using Cabot's own data, based on mass balance calculations and Cabot-derived emission factors. Biogenic GHG emissions from stationary combustion are, in most cases, calculated using Cabot-derived emission factors.

A review of the biogenic emission factors is conducted at least annually and whenever new sources of biogenic emissions are identified, to ensure their reliability and accuracy. These emission factors are specific to Cabot, as they are derived from the biogenic content of feedstock and the CO_2 yield of our production facilities.

The method used to determine these emissions is comparable to the broader mass balance method used to determine Scope 1 emissions. The method is compared and reviewed annually to ensure it remains valid and accurate.

6. Basis for Reporting Emissions Intensity

GHG emissions intensity is calculated as:

$$\frac{MTCO_{2e}\ of\ emissions}{MT\ of\ products}$$

The intensity of our GHG emissions is calculated for all Scope 1 and 2 emissions produced by facilities under Cabot's operational control. Emission intensity values are rounded to two decimal points for reporting purposes.

7. Data Management

Data Collection and Calculation

Data collection and the calculation of Scope 1 and 2 emissions are conducted through a web-based sustainability cloud system, which collects data for individual sites on a monthly, quarterly, or annual basis. The data is obtained from existing business process systems as well as directly from the sites.

Data Governance and Auditability

The sustainability cloud system provides for an advanced level of accountability and governance regarding Cabot's environmental sustainability data. Data points require supporting evidence, either in the form of an invoice or a comment explaining the origin of the data point. These data points are entered into the reporting system and reviewed by separate employees at each site. All actions within the system are tracked, and reports can be generated at any time to review.

Additionally, a change management procedure ensures that any significant modifications to the calculation methodology are reviewed in a separate environment before being implemented in the production environment.